

A Correlation of
Elevate Science
Grade 4, ©2019



To the
Arizona Science Standards 2018
Grade 4

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Introduction

The following document demonstrates how the ***Elevate Science, ©2019*** program supports Arizona Standards for Science (adopted in 2018). For each standard, correlation references are to the Student Edition and Teacher Edition where applicable.

Elevate Science is a comprehensive K-5 science program that focuses on active, student-centered learning. It builds students' critical thinking, questioning, and collaboration skills, and fuels interest in STEM and creative problem solving while supporting literacy development for elementary-age learners. Developed to support Next Generation Science Standards (NGSS), ***Elevate Science*** integrates three-dimensional learning of the Scientific and Engineering Practices, Crosscutting Concepts (CCC), and Disciplinary Core Ideas (DCIs).

The ***Elevate Science*** blended print and digital curriculum engages students in phenomena-based inquiry and hands-on investigations.

- Problem-based learning Quests put students on a journey of discovery
- Engineering-focused features infuse STEM learning
- Coding and innovation engage students and build 21st century skills

The Teacher's Edition of ***Elevate Science*** helps elementary educators teach science with confidence: Scaffolding, ELD, differentiated instruction, and an instructional organization based upon the 5E learning model, (Engage, Explore, Explain, Extend/Elaborate, Evaluate), provide all the support needed for successful teaching practices. Professional development offers point-of-use support. A full-view approach to inquiry and testing provides new options for a variety of hands-on labs and assessments for three-dimensional learning.

Elevate Science prepares students for the challenges of tomorrow, building strong reasoning skills and critical thinking strategies as they engage in explorations, formulate claims, and gather and analyze data that promote evidence-based argument. Designed for today's classroom, preparing students for tomorrow's world. ***Elevate Science*** promises to:

- Elevate thinking.
- Elevate learning.
- Elevate teaching.

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Fourth Grade: Systems and System Models; Energy and Matter; Stability and Change	
By the end of fourth grade, students expand on the idea that energy from the Sun interacts with Earth systems and explore other forms of energy we use in everyday life. Students apply their understanding of the various Earth systems (geosphere, hydrosphere, atmosphere, biosphere) and how they interact with each other and heat from the Sun. Students understand how geological systems change and shape the planet and provide resources. Students also develop an understanding of how Earth processes and human interactions positively and negatively that can change environments impacting the ability for organisms to survive. Student investigations focus on collecting and making sense of observational data and simple measurements using the science and engineering practices: ask questions and define problems, develop and use models, plan and carry out investigations, analyze and interpret data, use mathematics and computational thinking, construct explanations and design solutions, engage in argument from evidence, and obtain, evaluate, and communicate information. While individual lessons may include connections to any of the crosscutting concepts, the standards in fourth grade focus on helping students understand phenomena through systems and system models, energy and matter and stability and change.	
Physical Sciences: Students develop an understanding of how Earth’s resources can be transformed into different forms of energy. Students develop a better understanding of electricity and magnetism.	
Physical Science Standards	
4.P4U1.1 Develop and use a model to demonstrate how a system transfers energy from one object to another even when the objects are not touching.	SE/TE: Energy, 8 Energy in Motion, 9 Visual Literacy Connection: How does energy affect particles of matter?, 10-11 Collisions: Sports Connection, 16 ulnvestigate Lab: How does energy transfer between objects?, 17 Visual Literacy Connection: Energy Changes in a Collision, 18-19 ulnvestigate Lab: How does heat move?, 25 Visual Literacy Connection: How is energy transferred?, 26-27 Energy and Particle Motion, 28 Interactivity, 28 Crosscutting Concept Toolbox: Systems, 36 Electric Circuits, 38 Interactivity, 38 Science and Engineering Practices Handbook: Science Practices, Developing and Using Models, EM6 TE Only: 21 st Century Skills: Interpersonal and Collaborative Skills, 27

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4.P4U1.2 Develop and use a model that explains how energy is moved from place to place through electric currents.	<p>SE/TE: <ul style="list-style-type: none"> Investigate Lab: How does electric energy flow in circuits?, 35 Moving Electrical Charges, 37 Quest Connection, 37 Electric Circuits, 38 Quest Findings STEM: Power from the People, 92 Science and Engineering Practices Handbook: Science Practices, Developing and Using Models, EM6 </p> <p>TE Only: Focus on Mastery: Using Models, 36</p> <p>This standard is also addressed in <i>Elevate Science</i> Grade 3, Topic 2, Lesson 1: Electric Forces.</p>
4.P2U1.3 Develop and use a model to demonstrate magnetic forces.	<p>SE/TE: <ul style="list-style-type: none"> Electric Charge, 36 Model It!, 36 Waves and the Electromagnetic Spectrum: SEMS Connection, 124 Waves You Cannot See, 131 Science and Engineering Practices Handbook: Science Practices, Developing and Using Models, EM6 </p> <p>TE Only: 21st Century Skills: Interpersonal and Collaborate Skills, 131</p> <p>This standard is also addressed in <i>Elevate Science</i> Grade 3, Topic 2, Lesson 2: Magnetic Forces.</p>

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4.P4U3.4 Engage in argument from evidence on the use and impact of renewable and nonrenewable resources to generate electricity.	<p>SE/TE: Visual Literacy Connection: How does energy affect particles of matter?, 11 Electric Circuits, 38 uConnect Lab: How are resources used?, 54 Literacy Connection: Use Text Features, Energy of the Future, Wave Energy, Solar Energy, 55 Storing Chemical Energy, 62 Quest Check-In: Human Power, 63 STEM Math Connection (hydropower), 81 Environmental Impacts of Energy Use: STEM Connection, 84 Impact of Energy Production, 86 Visual Literacy Connection: How can the use of energy damage ecosystems?, 88-89 Impact of Transporting Fuels, 90 Lesson 4 Check: Question 1, 90 Quest Check-In: Impact Inspections, 91 uDemonstrate Lab: How can energy resource usage change?, 98-99 Quest Check-In: Impact Inspections, 91 Science and Engineering Practices Handbook: Science Practices, Engaging in Arguments from Evidence, EM7</p>
<p>Earth and Space Sciences: Students develop an understanding of the different Earth systems and how they interact with each other. They understand how geological systems change and shape the Earth and the evidence that is used to understand these changes. They also understand how weather, climate, and human interactions can impact the environment.</p>	
<p>Earth and Space Standards</p>	
4.E1U1.5 Use models to explain seismic waves and their effect on the Earth.	<p>SE/TE: Patterns of Earthquakes and Volcanoes, 169 Crosscutting Concepts Toolbox: Patterns, 169 Lesson 1 Tectonic Hazards: Curriculum Connection, 208 Earthquakes, 210 uBe a Scientist: Earthquake Evidence, 210 Hazards of Earthquakes, 211 Literacy Toolbox: Cause and Effect, 211 Visual Literacy Connection: What happens during a tsunami?, 212 Solve It With Science: Where is the greatest earthquake risk?, 225 Impacts of Natural Hazards: Engineering Connection, 226 STEM uInvestigate Lab: Where should you build an earthquake-safe structure, 227 STEM uDemonstrate Lab: How can homes be designed to be more earthquake resistant?, 240-241</p>

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4.E1U1.6 Plan and carry out an investigation to explore and explain the interactions between Earth’s major systems and the impact on Earth’s surface materials and processes.	<p>SE/TE: <ul style="list-style-type: none"> uInvestigate Lab: Why is oil cleanup so hard?, 85 Impact of Energy Production, 86 Impact of Obtaining Fuel, 87 Visual Literacy Connection: How can the use of energy damage ecosystems?, 88-89 Lesson 4 Weathering and Erosion: STEM Connection, 184 uInvestigate Lab: How can a rock wear away?, 185 Chemical Weathering, 186 uBe a Scientist: Weathering, 186 Physical Weathering, 187 Quest Connection, 187 Erosion, 188 Movement of Particles, 189 Changes in Landforms Over Time, 191 STEM Quest Check-in: How does water affect landforms?, 192 Extreme Science: Powerful Plants, 193 Assessment: Question 6, 197 Evidence-Based Assessment: Questions 1-5, 198-199 Science and Engineering Practices Handbook: Science Practices, Carry Out Investigations, EM1 </p>
4.E1U1.7 Develop and/or revise a model using various rock types, fossils location, and landforms to show evidence that Earth’s surface has changed over time.	<p>SE/TE: <ul style="list-style-type: none"> Quest Kickoff: Dig for the Truth, 244-245 uInvestigate Lab: What patterns do fossils follow?, 249 Rock Formations, 251 Rock Strata Can Change, 251 STEM Math Connection: Canyonlands, 255 uInvestigate Lab: How can rock layers show change?, 259 Fossil Clues on Earth, 260 Index Fossils, 261 Crosscutting Concepts Toolbox, Patterns, 261 Visual Literacy Connection: How can layers of rock change?, 262-263 Comparing Rock Layers, 264 Quest Findings: Dig for the Truth, 268 Assessment: The Essential Question, 271 Evidence-Based Assessment: Questions 1-6, 272-273 uDemonstrate Lab: How can you correlate rock layers?, 274-275 </p>

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4.E1U1.8 Collect, analyze, and interpret data to explain weather and climate patterns.	<p>SE/TE: Visual Literacy Connection: How much rainfall is enough?, 220-221 Blizzards, Hurricanes, and Tornadoes, 222 Science and Engineering Practices Handbook: Science Practices, Analyzing and Interpreting Data, EM4</p> <p>This standard is also addressed in <i>Elevate Science</i> Grade 3, Topic 3, Lesson 2: Seasonal Weather Changes; and Topic 4, Lesson 2: Climate Change; Lesson 3: World Climates.</p>
4.E1U3.9 Construct and support an evidence-based argument about the availability of water and its impact on life.	<p>SE/TE: Erosion, 188j STEM Quest Check-In Lab: How does water affect landforms?, 192 Visual Literacy Connection: How much rainfall is enough?, 220-221 Blizzards, Hurricanes, and Tornadoes, 222 Science and Engineering Practices Handbook: Science Practices, Engaging in Arguments from Evidence, EM7</p> <p>TE Only: 21st Century Skills: Critical Thinking, 221 Focus on Mastery!: Cause and Effect, 223</p>
4.E1U2.10 Define problem(s) and design solution(s) to minimize the effects of natural hazards.	<p>SE/TE: Quest Kickoff: Protect the City! Hazard Incoming!, 204-205 uConnect Lab: How can you reduce the impact of rapidly sliding soil?, 206 Quest Connection: Describe, 211 Quest Check-In: Beware: Hot Ash!, 215 STEM uInvestigate Lab: Where should you build an earthquake-safe structure, 227 Plan It!, 228 STEM Quest Check-In Lab: How can you reduce hazard damage?, 232-233 Quest Findings: Protect the City! Hazard Incoming!, 234 STEM uDemonstrate Lab: How can homes be designed to be more earthquake resistant?, 240-241</p>

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Life Sciences: Students develop an understanding of the diversity of past and present organisms, factors impacting organism diversity, and evidence of change of organisms over time.	
Life Science Standards	
4.L4U1.11 Analyze and interpret environmental data demonstrate that species either adapt and survive, or go extinct over time.	<p>SE/TE: Mass Extinction, 265 Adaptations of Flowers, 298 Plant and Animal Responses to the Environment: Engineering Connection, 316 Interactivity, 320 Changing Environments and Survival, 321 Science Practice Toolbox: Ask Questions, 321 Behaviors and Survival, 322 Assessment: Question 7, 329 Science and Engineering Practices Handbook: Science Practices, Analyzing and Interpreting Data, EM4</p> <p>TE Only: Differentiated Instruction: Support Struggling Students & Advanced Learners, 321</p>

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